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**FULL TEXT OF CASES (USPQ FIRST SERIES)**  
In re Kuhle, 188 USPQ 7 (CCPA 1975)

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**In re Kuhle**

**(CCPA)**  
**188 USPQ 7**

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**Decided Dec. 4, 1975**  
**No. 75-602**

**U.S. Court of Customs and Patent Appeals**

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**Headnotes**

**PATENTS**

**1. Patentability — Invention — Specific cases — Mechanical (§ 51.5095)**

**Patentability — Aggregation or combination — Omission of part (§ 51.161)**

Use of spring-loaded contact engaging one end of battery would have been obvious to one of ordinary skill in art in instrument for measuring moisture in soil by detecting conductivity; deletion of prior art switch member, eliminating its function, was obvious expedient; battery in axial alignment with rod is well known with common flashlight.

**2. Patentability — Anticipation — Knowledge of prior art presumed (§ 51.215)**

**Patentability — New use or function — Analogous art (§ 51.553)**

Person of ordinary skill in conductivity measuring device field would be expected to be familiar with references disclosing moisture meter and device used to measure change in conductivity between two electrodes placed in liquid.

**Particular patents — Moisture Meter**

**Kuhle, Portable Moisture Meter, rejection of claims 5 and 6 affirmed**

**Case History and Disposition:**

Appeal from Patent and Trademark Office Board of Appeals.

Application for patent of Karl F. Kuhle, Serial No. 314,180, filed Dec. 11, 1972. From decision rejecting claims 5 and 6, applicant appeals. Affirmed.

**Attorneys:**

Jessup & Beecher, Los Angeles, Calif. for appellant.

Joseph F. Nakamura (Mary Leahy, of counsel, R. V. Lupo, on the brief) for Commissioner of Patents and Trademarks.

**Judge:**

Before Markey, Chief Judge, and Rich, Baldwin, Lane, and Miller, Associate Judges.

**Opinion Text**

**Opinion By:**

Miller, Judge.

This appeal is from the decision of the Board of Appeals of the Patent and Trademark Office affirming the examiner's rejection of claims 5 and 6 of application serial No. 314,180, filed Dec. 11, 1972, for "Portable Moisture Meter." We affirm.

**The Invention**

Claim 5 defines a portable electrical instrument for measuring the amount of moisture in the soil by detecting the conductivity of the soil. The smaller the conductivity, the drier the soil. Figure 1 of the drawings illustrates the device.

*Tabular, graphic, or textual material set at this point is not available. Please consult hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.*

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Claim 5 reads as follows:

5. An instrument for measuring the moisture content of soil within a predetermined range, including: a tubular casing formed of electrically insulating material; an electrically conductive tubular member mounted in said casing in coaxial relationship therewith and extending out from one end of said casing; an electrically conductive rod mounted coaxially within said electrically conductive tubular member; electrically insulating bushing means interposed between said rod and said electrically conductive tubular member to position said rod in said tubular member and to insulate said rod from said tubular member; a pointed tip member of electrically conductive material secured to the end of said rod in electrical contact therewith and in axial alignment with said tubular member and axially separated and insulated therefrom by said bushing means; a battery mounted in said tubular casing in axial alignment with said rod and having an electrode at one end of thereof engaging the end of said rod; a spring-loaded contact mounted in said casing engaging the battery at the other end thereof and urging said battery electrode against said end of said rod; an electric meter mounted at the other end of said casing and observable through said other end; and electric connections in said casing connecting said meter to said spring-loaded contact and to said electrically conductive tubular member.

Dependent claim 6 reads:

6. The instrument defined in claim 5, in which said electric connections include a metallic wrapping positioned around the inner surface of said tubular casing [sic casing] spaced from said battery and in contact with said electrically conductive tubular member.

### Proceedings Below

The claims were rejected under 35 USC 103 as unpatentable over the Smith patent, No. 2,437,134, issued Mar. 2, 1948, and the Sherrard patent, No. 2,328,853, issued Sept. 7, 1943.

As stated by the board, the examiner's position was that Smith discloses a moisture meter which operates on basically the same principle and in the same manner as appellant's device, measuring moisture content by the conductivity between two electrodes inserted into the soil being tested; further, that in view of the Sherrard teaching of a battery having a spring-loaded contact mounted in a tubular casing used to measure the change in conductivity between two electrodes inserted into liquids (e.g. antifreeze liquids), it would have been obvious to one skilled in the art to utilize such a battery and spring-loaded contact in the Smith device. The board also noted that use of a spring-loaded contact in the manner claimed would be obvious because this was "notoriously old with the common flashlight," and that the particular placement provided no novel or unexpected result. In response to appellant, the board said that deletion of elements, such as the switch of Smith or Sherrard, thereby deleting their function, was a matter of simplification and an obvious expedient. With respect to the limitation in claim 6 of the "metallic wrapping," the board found no novel or unexpected result over the metallic connections used in the references.

### Opinion

With respect to claim 5, appellant contends that Smith does not show: (1) a battery mounted in axial alignment with the rod and having an electrode at one end contacting the rod; (2) a spring-loaded contact engaging the battery and urging the battery electrode against the rod; and (3) an electrical circuit connecting the meter to the spring-loaded contact and to the electrically conductive metal tube. Further, appellant argues that Sherrard does not show a spring-loaded contact, but moves his entire battery to effectuate electrical contact.

[1] We agree with the board that, in view of Sherrard, it would have been obvious to one of ordinary skill in the art to use a spring-loaded contact engaging one end of the battery. Sherrard's specification teaches:

The lower end of the tubular member has mounted therein the upper end of a bar formed of insulating material, having its upper end terminating within the body and provided with an electrical contact, a spring being supported on the upper end of the member and surrounding the contact and designed to support a number of dry cells within the upper end of the member, the upper end of the member having a threaded portion for receiving a plug provided with a cavity in its upper end for receiving a push button having at its lower end a contact member designed to engage the upper end of the cell, a light spring being provided for yieldably holding the member in contact with the electrode of the cell. [Drawing numbers omitted.]

We also agree that the particular placement of the contact provides no novel or unexpected result. The manner in which electrical contact is made for Smith's battery

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would be an obvious matter of design choice within the skill of the art. See *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); *In re Gazda*, 42 CCPA 770, 219 F.2d 449, 104 USPQ 400 (1955). As the board pointed out, use of a spring-loaded contact in the manner claimed is well known with the common flashlight. See *In re Howard*, 55 CCPA 1121, 394 F.2d 869, 157 USPQ 615 (1968).

We further agree with the board that deletion of the switch member (and other elements) found in Smith and Sherrard, thereby deleting their function, was an obvious expedient. *In re Keegan*, 51 CCPA 1344, 331 F.2d 315, 141 USPQ 512 (1964). Appellant contends that the electrical circuit of his device is not completed until the electrodes are inserted into the soil, so that a switch is not needed. However, the circuits in both Smith and Sherrard are also incomplete until the electrodes are inserted into the material to be tested.

We are persuaded by the Solicitor's argument that the Smith drawing would lead one to believe that the battery is in axial alignment with the rod and that this is well known with the common flashlight, with its axially contained battery. We are further persuaded by the Solicitor's argument that the electrical circuit connecting the meter to the spring-loaded contact and to the metal tube is similar to that disclosed by Smith, whose specification teaches:

The electrical connections for my meter are shown best in Fig. 2. It will be noted that a dry cell is provided, the positive terminal of which is attached to a connector leading to the coil of a milliammeter. The other terminal of the milliammeter is grounded \* \* \* furnishing electrical connection to the metal tube. [Drawing numbers omitted.]

With respect to claim 6, we agree with the board that the limitation of the "metallic wrapping," which is really a lining of the tube, presents no novel or unexpected result over the metallic connections used in the references. Use of such a means of electrical connection in lieu of those used in the references solves no stated problem and would be an obvious matter of design choice within the skill of the art. *In re Launder*, 42 CCPA 886, 222 F.2d 371, 105 USPQ 446 (1955); *Flour City Architectural Metals v. Alpana Aluminum Products, Inc.*, 454 F.2d 98, 172 USPQ 341 (8th Cir. 1972); *National Connector Corp. v. Malco Manufacturing Co.*, 392 F.2d 766, 157 USPQ 401 (8th Cir.), cert. denied, 393 U.S. 923, 159 USPQ 799 (1968). See *Graham v. John Deere Co.*, *supra*.

[2] Finally, we cannot agree with appellant that the collective teachings of Smith and Sherrard may not properly be considered. The devices of the references are, like appellant's device, used to measure conductivity between two electrodes inserted into the material being tested. A person of ordinary skill in the conductivity-measuring device field would expected to be familiar with the references.

Accordingly, the decision of the board is affirmed.

**- End of Case -**

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